



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,892	01/17/2006	Moon-Soo Han	101-1681T	3441
38209	7590	07/07/2010	EXAMINER	
STANZIONE & KIM, LLP 919 18TH STREET, N.W. SUITE 440 WASHINGTON, DC 20006			PENDLETON, DIONNE	
			ART UNIT	PAPER NUMBER
			2627	
			MAIL DATE	DELIVERY MODE
			07/07/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,892	Applicant(s) HAN, MOON-SOO	
	Examiner DIONNE H. PENDLETON	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. **Claims 1-16** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Please consider independent claims 1, 4, 6 and 9:

Each of claims 1, 4, 6 and 9, recite some variation the following: "a servo to...generate a track jump start control signal if it is judged that the *current position* of the pickup, *at the time of the track jump command*, is within a reference range...".

This recitation is not described in the specification. Particularly since the "*current position*" and the "[*position*] *at the time of the track jump command*" are not one-and-the-same. Referring to Figure 3 of the instant application, **step 301** corresponds to the position of the pickup at the time of the track jump command. While **step 303** corresponds to the "current" position, at the time of performing a position check. While the Instant Application's specification does describe the step of judging the "*current*" position **following** the receipt of a track jump command (**step 303**, in figure 3), the instant Application's specification does not describe the step of judging

the position of the pickup **at the time of** the track jump command (**step 301**, in figure 3), as is now recited. Figure 3 illustrates an intervening step (see, **step 302**), which further substantiates the Examiner's position that the instant Application only describes judging the position of the pickup *after* the time at which a track jump command is received by the controller. Correction is therefore required.

Any and all claims which depend from independent claims 1, 4, 6 and 9, have been similarly rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Aoe (US 2004/00130057)** in view of **Hong (Patent Number 7,012,861)** in view of **Akiyama (Patent Number 5,712,835)**.

Regarding apparatus claim 1 and method claim 4,

And, as is best understood with regard to the U.S.C. 112 first paragraph rejection, above:

AOE teaches an apparatus for performing track jumping, the apparatus comprising:

a pickup (“**14**” in **figure 7**) to read a signal from an optical disc;
an RF processing unit (“**16**” in **figure 7**) to generate an error signal to control the pickup by shaping and amplifying the signal read by the pickup ([0047]);
a servo (“**18**”) to judge a position of the pickup based on the error signal ([0047]);
and a driver to move the pickup ([0047] teaches moving the pickup for tracking/ focusing control).

Aoe fails to expressly teach that the servo receives a track jump command to generate a track jump start and end control signals if it is judged that the current position of the pickup, at the time of the track jump command, is within a reference range.

Hong teaches an apparatus for performing track jumping, the apparatus comprising:

a pickup (“**202**” in **figure 5**) to read a signal from an optical disc;
an RF processing unit (“**203**”, in **figure 5**);
a servo (*see combination of elements 205 and 206 in Figure 5*) to judge a current position of the pickup based on the error signal (*column 7:30-32*) and receive a track jump command to generate a track jump start control signal (*col. 7:34-36 teaches that microcomputer controls the track jump; col. 8:47-52 teaches that microcomputer outputs track jump command to servo*) if it is judged that the current position of the pickup, *at the time of the track jump command*, is within a reference range (*see U.S.C 112 first paragraph rejection, above; col. 7:64 – col. 8:3 teaches*

Art Unit: 2627

that the TZC signal is used as a reference signal for controlling a kick pulse upon the receipt of a track jump command by the microcomputer. Since it is well understood in the art that a TZC signal may be used to indicate the center of a track, said track center is interpreted as corresponding to the "reference range" of the claim), and generate a track jump end control signal (column 7, line 64 through column 8, line 3, discloses generation of a kick pulse and brake pulse under the control of controller "206");

and a driver ("210" in figure 5) to move the pickup directly to a target track of the optical disc in response to the track jump start control signal, and stop moving the pickup in response to the track jump end control signal.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Aoe and Hong, such that the device of Aoe includes a servo operating to generate track jump start and end control signals for the driver, for the purpose moving the light spot of the pickup to a target track and commencing data reproduction and/or recording.

Hong fails to expressly teach that the track jump start control signal is based on the judged current position of the pickup via tracking error signal.

AKIYAMA teaches an optical disk drive apparatus wherein in an access operation from a position P2 to a target position P3, the light spot is correctly positioned in the center of the track before the start of the track jump (**column 4, lines 59-66, column 7, lines 14-25, column 8, lines 62-65 and column 9, lines 6-11**). Akiyama is therefore interpreted as teaching that when the pick up is at point P2, i.e., current

Art Unit: 2627

position, the track jump from P2 to P3 is based on the judged current position of the pickup falling within a reference range i.e., whether or not the beam spot is centered, since the track jump from position P2 starts only after the position of the light spot has been corrected **(column 4, lines 59-66)**.

It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of AOE and HONG per the teachings of AKIYAMA, for the purpose of improving the accuracy of the access operation.

Regarding claim 2,

Akiyama teaches wherein if the judged position of the pickup unit is within the reference range e.g. the center of the track, the servo outputs a predetermined voltage as the track jump start control signal to the driver **(column 9:5-11 discloses that the light spot must be appropriately positioned *before* the second track jump)**.

Regarding claim 3,

The combined disclosures of Aoe, Hong and Akiyama, specifically Akiyama teaches that if the judged position of the pickup unit is not within a reference range e.g. the center of the track, the servo cuts off a predetermined voltage from being output as the track jump start control signal to the driver **(*the velocity generating signal is cut off following the completion of the first jump but prior to the start of the second jump, for the purpose of adjusting the position of the light spot*)** until the judged position of the pickup is within the reference range **(column 9:5-11 discloses that the**

Art Unit: 2627

light spot must be appropriately positioned i.e., “within the reference range” before the second track jump commences).

Regarding claim 5,

The combined disclosures of Aoe, Hong and Akiyama, specifically Akiyama teaches wherein if the judged position of the pickup unit is within the reference range e.g. the center of the track, the servo outputs a predetermined voltage as the track jump start control signal to the driver (**column 9:5-11 discloses that the light spot must be appropriately positioned before the second track jump**);

and if the judged position of the pickup unit is not within a reference range e.g. the center of the track, the servo cuts off a predetermined voltage from being output as the track jump start control signal to the driver (***the velocity generating signal is cut off following the completion of the first jump but prior to the start of the second jump, for the purpose of adjusting the position of the light spot***) until the judged position of the pickup is within the reference range (**column 9:5-11 discloses that the light spot must be appropriately positioned i.e., “within the reference range” before the second track jump commences**).

Regarding claims 6 and 9,

The combined disclosures of Aoe and Hong teach an apparatus for performing track jumping of an optical pickup in an optical disc recording/reproducing apparatus, the apparatus comprising:

an RF processing unit (**"16" in figure 8 of Aoe**) to generate an error signal to control the pickup by shaping and amplifying the signal read by the pickup;

a servo (**"18" in figure 8 of Aoe; "205" in Hong**) to judge a current position of the pickup relative to a track of the optical disc based on the positional error signal, and to output a tracking control signal to control a position of the optical pickup based on the judged current position;

a driver (**"210" in figure 5 of Hong**) to control the position of the optical pickup using the tracking control signal output from the servo to move the pickup directly to a target track of the optical disc;

and Hong teaches a controller (**206**) for monitoring tracking and to control track jumping, if it is determined that the position of the pickup is within a predetermined range of a center of the track *when a track jump command is received by the controller (see U.S.C 112 first paragraph rejection, above; col. 7:64 – col. 8:3 teaches that the TZC signal is used as a reference signal for controlling a kick pulse upon the receipt of a track jump command by the microcomputer. Since it is well understood in the art that a TZC signal may be used to indicate the center of a track, said track center is interpreted as corresponding to the "reference range" of the claim).*

Hong fails to teach that the controller also operates to delay outputting the track jump start control signal to the driver until the tracking control signal indicates that the position of the optical pickup is in a predetermined location.

AKIYAMA teaches that a controller (“8” in figure 2) for monitoring the tracking control signal (TES) and controlling track jumping based on the tracking control signal (column 6, lines 61 through column 7, line 4) and is further interpreted as teaching that a track jump start control signal is generated only if the “current” position of the optical pickup is at a predetermined location. Specifically, Akiyama teaches that prior to jumping from position P2 to position P3, the light spot is correctly positioned in the center of the track before the start of the track jump (column 8, lines 62-65 and column 9, lines 6-11). Akiyama is thereby fairly interpreted as teaching that if the current position of the optical pickup is not at a predetermined location i.e., the tracks center as determined by tracking control unit (“5” in figure 2), the track jump start control signal is not enabled.

The combined disclosures of Aoe, Hong and Akiyama do not expressly teach that the controller outputs a track jump start control signal only if the position of the optical pickup is within a *predetermined range* of the center of the track. However, since Akiyama teaches that by centering the light spot on the instant track prior to commencing a track jump, the accuracy of a track jump is improved, it follows that delaying a track jump until the pickup is within a predetermined range of a center of a track, will also act to increase the accuracy of a subsequent track jump.

Therefore, It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of Aoe, Hong per the teachings of AKIYAMA, for the purpose of improving the accuracy of the access operation.

Regarding claim 7,

Hong teaches a controller **(209 in figure 5)** outputs a track jump start signal to the driver, sets an output time of the track jump-end signal **(column 7:64 – column 8:3)**, and calculates a target track to be jumped **(Hong discloses that a TZC signal is used as a reference signal for controlling a kick pulse, brake pulse and a brake time during a track jump, thus implying that the target track is “calculated” so as to accurately reach the target track during an access operation.)**

Regarding claim 8,

Hong teaches the apparatus of claim 6, wherein: the controller outputs the track jump end signal to the driver when the optical pickup arrives at the target track **(column 9:39-55).**

Regarding claims 10-12,

Hong teaches that a track jump signal including a kick pulse/voltage and a stop pulse i.e., “brake voltage” may be used to accurately achieve track jump operations. **(column 7: 64 - column 8:3).**

Regarding claim 13,

Akiyama teaches delaying the outputting of the track jump command to the optical pickup until the optical pickup is within a predetermined range **(Akiyama teaches that the beam spot must be centered on the track prior to commencement of the final jump, see column 4:56-60)**; and outputting the track jump command to the optical pickup while the optical pickup is within the predetermined range **(column 4:63-66).**

Regarding claims 14 and 16,

The grounds for rejection of claims 14 and 16 are set forth in the rejections of claims 10-12, above.

Regarding claim 15,

Akiyama teaches that the track jump command causes the optical pickup to start moving toward a target track of the optical disc (**see column 5:1-2**); and the method further comprises outputting a track jump stop command to the optical pickup when the optical pickup arrives at the target track (**Hong, see discussion of brake pulse in column. 8:1-3**).

Response to Arguments

3. Regarding Applicant's argument that: **None Of The Cited References Disclose Or Suggest "Judging Whether A Position Of The Optical Pickup Is Within A Predetermined Range...At A Time Of A Track Jump Command":**

The newly amended language is held as being drawn to subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See the 35 U.S.C. 112 1st paragraph rejection, above. New matter will not be given the benefit of any foreign priority date(s).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIONNE H. PENDLETON whose telephone number is (571)272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dionne H Pendleton/
Examiner, Art Unit 2627

/Wayne Young/
Supervisory Patent Examiner, Art Unit 2627